

Detector Switch

One-way Operation Type

SPPW8 Series



One-way operation detector switch ideal for media detection.

Detector

Push

Slide

Rotary

Encoders

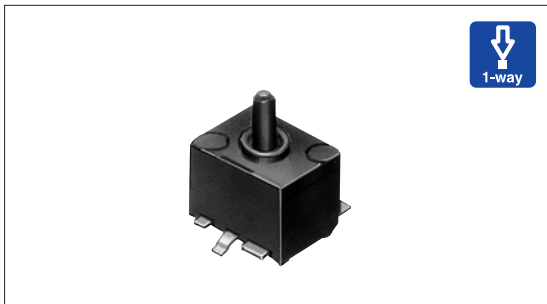
Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products



Features

- Reflow and dip solderable.
- Reflow solderable type can be packaged and delivered in carrier taping. (Except for slider high-10, 3mm products)

Applications

- For detecting mechanisms in DVD players/recorders and facsimile machines
- For detecting the insertion of various media in portable CD/MD players
- For detecting battery lids in digital still cameras
- For massage machine remote controllers

Typical Specifications

| Items | | Specifications |
|--|--------------|---------------------------------|
| Rating (max.) / (min.) (Resistive load) | | 0.1A 30V DC/100 μ A 3V DC |
| Contact resistance (Initial /After operating life) | | 1 Ω max./2 Ω max. |
| Operating force | | 0.3N max. |
| Operating life | Without load | 100,000cycles |
| | With load | 100,000cycles (0.1A 30V DC) |

Product Line

| Poles | Positions | Terminal type | Slider height (mm) | ON start position (mm) | Total travel (mm) | Product No. | Drawing No. |
|-------|-----------|-----------------------|--------------------|------------------------|----------------------|-------------|-------------|
| 1 | 1 | For PC board (Reflow) | h=6.1 | h ₁ =5.6 | h ₂ =4.45 | SPPW812302 | 1 |
| | | For PC board (Dip) | | | | SPPW812300 | 2 |
| | | For PC board (Reflow) | h=6.55 | h ₁ =6.05 | h ₂ =4.85 | SPPW810201 | 1 |
| | | For PC board (Dip) | | | | SPPW810203 | 2 |
| | | For PC board (Reflow) | h=7.6 | h ₁ =7.1 | h ₂ =5.9 | SPPW811203 | 1 |
| | | For PC board (Dip) | | | | SPPW811200 | 2 |
| | | For PC board (Reflow) | h=10.3 | h=9.8 | h=8.6 | SPPW810401 | 3 |
| | | For PC board (Dip) | | | | SPPW810400 | 4 |

Note

Products other than those listed in the above chart are also available. Please contact us for details.

Refer to **P.67** for product specifications.
Refer to **P.71** for taping package specifications.

Product Specifications

| Series | | SPPB | SPVE | SPPW8 | SPVM | SPVR | SPVF | SSCU | SSCT | SSCF | SSCM | |
|---------------------------------------|------------------------------------|--|---|--|---|------------------|--|---|--|---|---|--|
| Items | | | | | | | | | | | | |
| Operating temperature range | | -40°C to +85°C | -10°C to +60°C | | -40°C to +85°C | | -10°C to +60°C | -40°C to +85°C | | | -10°C to +60°C | |
| Rating (max.) (Resistive load) | | 0.1A 30V DC | | | 1mA 5V DC | | | 0.1A 12V DC | | | 1mA 5V DC | |
| Electrical performance | Initial contact resistance | 1 Ω max. | 500mΩ max. | 1 Ω max. | 2 Ω max. | 3 Ω max. | 500mΩ max. | 70mΩ max. | 20mΩ max. | 100mΩ max. | 2 Ω max. | |
| | Insulation resistance | 100MΩ min. 100V DC | | | | | | 100MΩ min. 250V DC | | 100MΩ min. 100V DC | | |
| | Voltage proof | 100V A for 1minute | | | | | | 250V AC for 1minute | | 100V AC for 1minute | | |
| Mechanical performance | Terminal strength | 3N for 1minute | 0.5N for 1minute | 3N for 1minute | 1N for 1minute | 0.5N for 1minute | 3N for 30 s | 3N for 1minute | | 5N for 1minute | 0.5N for 1minute | |
| | Actuator strength | 10N | 5N | 10N | 5N | 2N | 1N | 5N | 10N | | 0.5N | |
| | Vibration | 10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively | | | | | | | | | | |
| | Resistance to soldering heat | Manual soldering | 300±5°C, 5s max. | 350±5°C, 3s max. | | | | 300±10°C, 3 ⁺¹ s | 350±5°C, 3s max. | 350±10°C, 3 ⁺¹ s | 350±5°C, 3s max. | |
| | | Dip soldering | 260±5°C, 5±1s | | 255±5°C, 5±1s | | | 245±5°C, 5±1s | | 260±5°C, 5±1s | | |
| Reflow soldering | | Please see P.70 | | | | | | ————— | | | Please see P.70 | |
| Durability | Operating life without load | 50,000 cycles 2 Ω max. | 50,000 cycles 1 Ω max. | 100,000 cycles 2 Ω max. | 50,000 cycles 5 Ω max. | | 100,000 cycles 1 Ω max. | 10,000 cycles 100mΩ max. | 10,000 cycles 40mΩ max. | 50,000 cycles 200mΩ max. | 50,000 cycles 5 Ω max. | |
| | Operating life with load | (0.1A 30V DC) 50,000cycles 2 Ω max. | (0.1A 30V DC) 50,000cycles 1 Ω max. | (0.1A 30V DC) 100,000cycles 2 Ω max. | (1mA 5V DC) 50,000cycles 5 Ω max. | | (1mA 5V DC) 100,000cycles 1 Ω max. | (0.1A 12V DC) 10,000cycles 150mΩ max. | (0.1A 12V DC) 10,000cycles 60mΩ max. | (0.1A 12V DC) 50,000cycles 300mΩ max. | (1mA 5V DC) 50,000cycles 5 Ω max. | |
| Environmental performance | Cold | -20±2°C for 96h | | | | | -40±2°C for 96h | -20±2°C for 96h | | | | |
| | Dry heat | 85±2°C for 96h | | | | | | | | | | |
| | Damp heat | 40±2°C, 90 to 95%RH for 96h | | | | | | | | | | |

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

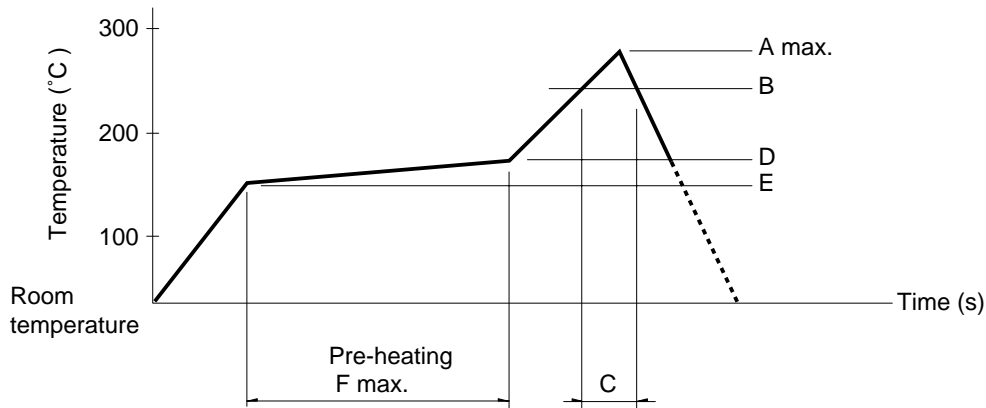
TACT Switch™

Custom-
Products

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 ϕ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



| Series (Reflow type) | A (°C) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|-------------------|--------|-------|--------|--------|-------|
| SPPB | 250 | 230 | 40 | | | |
| SPPW8 | | 200 | 20 | | | |
| SPVE | 260 | 230 | 40 | 180 | 150 | 120 |
| SPVG | | | | | | |
| SPVL | | | | | | |
| SPVM | | | | | | |
| SPVN | | | | | | |
| SPVP | | | | | | |
| SPVR | | | | | | |
| SPVS | | | | | | |
| SSCM | | | | | | |
| SPPY5 | | | | | | |

Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

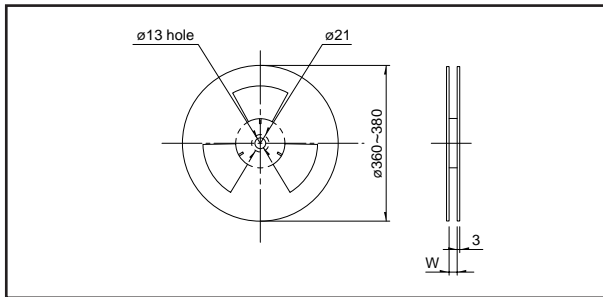
- Detector
- Push
- Slide
- Rotary
- Encoders
- Power
- Dual-in-line Package Type
- Multi Control Devices
- TACT Switch™
- Custom-Products

Taping Specifications

Taping Packaging

Reel Size

Unit:mm



| Series | | Number of packages(pcs.) | | | Reel width W(mm) | Tape width (mm) | |
|--------|--------------------|----------------------------|-----------------------------------|---------------------------------------|-----------------------|----------------------|----|
| | | 1 reel | 1 case (shipment within Japan) | 1 case (shipment outside of Japan) | | | |
| SPPB | 53(Horizontal) | 1,500 | 3,000 | 6,000 | 24.4 | 24 | |
| | 53(Vertical) | 600 | 1,200 | 2,400 | | | |
| | 63, 64 | 1,300 | 2,600 | 5,200 | | | |
| SPPW81 | h = 6.1(Reflow) | 1,000 | 2,000 | 4,000 | 12.4 | 12 | |
| | h = 6.55(Reflow) | | | | | | |
| | h = 7.6(Reflow) | 850 | 1,700 | 3,400 | | | |
| SPVE | Standard | h=3.8 | 2,800 | 5,600 | 22,400 | 16.4 | 16 |
| | | h=4.1 | | | | | |
| | | h=4.8 | 2,200 | 4,400 | 17,600 | | |
| | | h=5.2 | 2,000 | 4,000 | 16,000 | | |
| | | h=5.5 | | | | | |
| | Low-profile | h=3.3 | 2,800 | 5,600 | 22,400 | | |
| SPVG | | 2,500 | 5,000 | 10,000 | 44.4 | 44 | |
| SPVL | | 5,000 | 10,000 | 20,000 | | | |
| SPVM | | 3,000 | 6,000 | 12,000 | | | |
| SPVN | | 5,000 | 10,000 | 20,000 | | | |
| SPVP | | 4,500 | 9,000 | 18,000 | | | |
| SPVR | | 2,500 | 5,000 | 10,000 | | | |
| SPVS | | 5,000 | 10,000 | 20,000 | | | |
| SSCM | | 3,000 | 6,000 | 12,000 | | | |
| SPPY5 | | 550 | 1,650 | 3,300 | | | |

Note

Please place purchase orders for taping products per minimum package units (1 reel or 1 case).

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line
Package Type

Multi Control
Devices

TACT Switch™

Custom-
Products